C L A I M S

1. A method for automatic on-line calibration of process models for real-time prediction of process quality from raw process measurements comprising the steps of:

a) collecting raw process data;

b) processing data collected in step a) through a mathematical model to obtain a prediction of the quality;

c) processing said prediction through two independent dynamic transfer functions thus creating two intermediate signals;

d) storing the two intermediate signals obtained in step c) as a function of time in history;

e) retrieving at the time of a real and validated measurement of the quality, from said history, the absolute minimum and maximum value of the two intermediate signals in the time period corresponding to a minimum and maximum specified deadtime, which values define the minimum and maximum prediction possible;

f) calculating the deviation as being the difference between the real and validated measurement and the area encompassed between the minimum and maximum prediction possible as obtained in step e); and

g) proceeding with step i) if the absolute value of the deviation obtained in step f) is zero, or, if the absolute value of the deviation obtained in step f) is larger than zero,

h) incorporating the deviation into the process model, and

i) repeating steps a)-h).

2. A method according to claim 1, in which as mathematical model a Multiple Linear Regression model is used.

3. A method according to claim 1, in which as mathematical model a Linear Dynamic Model is used.

4. A method according to claim 1, in which as mathematical model a Radial Basis Function Neural Network is used.

5. A method according to claim 1, in which in step h) the deviation is incorporated into the model bias, thereby upgrading the prediction model.

6. A method according to claim 2, in which in step h) the deviation is incorporated into the model bias, thereby upgrading the prediction model.

7. A method according to claim 3, in which in step h) the deviation is incorporated into the model bias, thereby upgrading the prediction model.

8. A method according to claim 4, in which in step h) the deviation is incorporated into the model bias, thereby upgrading the prediction model.

9. A method according to claim 1, in which in step h) a Kalman filter method is used to incorporate the deviation into the mathematical model by adjusting its linear parameters thereby upgrading the prediction and improving the mathematical model by self learning.

10. A method according to claim 2, in which in step h) a Kalman filter method is used to incorporate the deviation into the mathematical model by adjusting its linear parameters thereby upgrading the prediction and improving the mathematical model by self learning.

11. A method according to claim 3, in which in step h) a Kalman filter method is used to incorporate the deviation into the mathematical model by adjusting its linear parameters thereby upgrading the prediction and improving the mathematical model by self learning.

12. A method according to claim 4, in which in step h) a Kalman filter method is used to incorporate the deviation into the mathematical model by adjusting its linear parameters thereby upgrading the prediction and improving the mathematical model by self learning.

13. A method according to claim 9, in which the Kalman filter is used in step h) under non steady-state conditions of the process.

14. A method according to claim 10, in which the Kalman filter is used in step h) under non steady-state conditions of the process.

15. A method according to claim 11, in which the Kalman filter is used in step h) under non steady-state conditions of the process.

16. A method according to claim 12, in which the Kalman filter is used in step h) under non steady-state conditions of the process.